

ABSTRACT OF THE DISCLOSURE

A stator assembly 16 for a brush-type permanent magnet DC motor includes a stator body 17 having a central axis A and an annular inner wall 20 disposed about the central axis. The inner wall has at least one raised portion 21 and at least one recess 22 adjacent to the at least one raised portion. The raised portion defines a flux recovery feature. At least one permanent magnet 18 is disposed within the recess 22 such that an inside radius IRM of the magnet is substantially the same as, and concentric with, an inside radius IRF of the raised portion as measured from the central axis, with the flux recovery feature 21 and magnet 18 defining a magnetic circuit. In section, the at least one raised portion is joined with a surface defining the at least one recess by a generally S-shaped structure thereby defining a curved transition therebetween. Thus, in a motor having N poles, only N/2 magnets are required.